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Sabee et al.

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[54] SYNCHRONIZED CLUTCH

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[58] Field of Search 192/53 B, 53 R, 48.5, 192/48.7, 105 C, 105 CS

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[57] ABSTRACT

A synchronized clutch for coupling a driven element to a drive element includes an externally activated nonpositive coupling, and a positive coupling which engages automatically when the driven element achieves a designated operational state. The nonpositive coupling, preferably comprising at least one friction element permitting some slippage between the drive and driven elements, accelerates the driven element to a velocity which at least approaches synchronization of the drive and driven elements. The positive coupling preferably comprises a sliding drive ring which is responsive to centrifugal weights to positively couple the drive and driven elements at a designated velocity. The external forces actuating the nonpositive coupling are preferably applied manually through a lever. Provision is preferably made for the automatic disengagement of the clutch when the velocity of the driven element decreases below a designated velocity.

25 Claims, 7 Drawing Sheets

